

with the control spotlight. This means that control elements situated near the position of the control spotlight, which is at the center of the control spotlight, are scaled larger than those elements that are further removed from the position of the control spotlight. Furthermore, those control elements are scaled larger that have a large planar overlap with the control spotlight when projecting the control spotlight onto the display device. FIGS. 4A through 4D show examples of this. Even control elements 61', which are not situated in a control spotlight 62, but are situated nearer to control spotlight 62 than other control elements 61", may be displayed larger than these other control elements 61".

[0059] The described method represents a determination of a control probability for the individual control elements 22. These control probabilities may also be determined according to another method on the basis of the user information, possibly by taking into account other information about situational influences, for example the driving situation, hitherto existing habits of the user, etc.

[0060] The control spotlight is continuously adapted. In a further step, the movements of the body part and possible additional properties of the body part are ascertained more precisely using a second sensor unit.

[0061] In example embodiments, in which transducers generating high-frequency signals are situated near the body of the user and receivers are situated on or around the display device in order to receive high-frequency signals transmitted via the body of the user and to determine from this a position of the hand of the user near the display device, the adaptation of the represented information may be finely adjusted particularly well. Body parts of users may be detected by such sensor systems at a distance of approximately 30 cm from the display device. If multiple users are within the range of the interactive control device in a vehicle, for example the driver and the front passenger of the motor vehicle, these may be distinguished on the basis of different high-frequency signals that are coupled into the body of the user via different transducers, which are integrated for example in a driver seat and in a front passenger seat. A scaling or general adaptation of the represented information may thus be additionally adapted to the function (driver/front passenger) of the user. For example, it is practical to represent fewer, but instead larger control elements on the display device if a driver wants to activate control elements on the display device at a high speed of the motor vehicle. A front passenger, who does not have to concentrate on driving the motor vehicle, may operate smaller control elements, for example, of which instead more are representable on the display device. In order to perform the fine adjustment, a provision may be made to ascertain a distance of the user's body part from the display device when detecting the control intention. Additionally, the extension of the body part is ascertained. This extension is also taken into account when scaling and/or refining the control element(s). For a user who has large and wide fingers, the control elements must be displayed larger than for a user who has small and narrow fingers. A finer adaptation is thus possible in the additional step. More than two steps may be provided. The second sensor unit may also be an sensor unit based on ultrasound.

[0062] FIG. 2 schematically shows the switch from a visual to a haptic layout. The upper region of FIG. 2 shows two possible developments of a representation of information 31, 32 in a so-called visual layout. The left representation 31 does not show any control elements. The right representation 32

shows small control elements 33. The largest region 34 of display device 35 is intended for displaying the information. If a body part 36, in this case a hand, approaches display device 35, as is indicated at the center of FIG. 2, then the represented information is changed such that control elements 33' are magnified, that they include additional text information (A, B, C, D) and are changed in their transparency level at least as compared to representation 31 in the upper left corner. The haptic layout is optimized such that control elements 33' may be touched optimally by one finger in order to be able to activate and trigger a control action associated with control element 33'.

[0063] FIG. 3 shows another example for switching from a visual layout 41 to a haptic layout 42. Points of interest (POI) 44-47 of a map view 48 of a navigation system are schematically represented on display device 43. If a finger 49 approaches display device 43 with a movement that aims at the bottom toward the right edge 50 of the display device, then the points of interest are scaled in terms of their planar dimension as a function of a distance from the lower end of right edge 50. In order to achieve an improved operability, some points 46, 47 are shifted slightly with respect to their original position. In a left section 51 of map view 48, the layout is still adapted for a visual communication of information.

[0064] FIGS. 4A through 4D show different representations 55-58 of information on display device 59. In addition to a finger 60, which respectively intends to operate one of control elements 61, a so-called control spotlight 62 is shown in circular shape on display device 59. Control elements 61 are scaled as a function of their position relative to position 63 (the center) of control spotlight 62 and a planar overlap with control spotlight 62. The overall dimension of the scaling may be a function of a driving situation. If the vehicle is traveling on an uneven surface at high speed, for example, then the control elements have to be scaled larger than when traveling on an even roadway at low speed. Control spotlight 62 exists only virtually and is normally not represented on display device 59. Control spotlight 62 is represented only for the purpose of illustration.

[0065] FIGS. 5A through 5D show how control spotlight 70 changes when a finger 71 approaches display device 72 and how this affects the scaling of the control elements in example embodiments. Views 73 of a display device 72 shown in FIGS. 5A through 5D respectively show a navigation map with points of interest 81-86, which are control elements. A haptic layout is selected in FIG. 5A, in which points of interest 61-65, which lie in control spotlight 70, are represented larger than point of interest 86, which lies outside of control spotlight 70. View 73 as shown in FIG. 5A corresponds to a representation in which the operating hand is still far away from display device 72. Therefore, a finger is not yet shown in FIG. 5A. When finger 71 approaches, a radius 74 of control spotlight 70 is reduced such that control spotlight 70 is smaller in FIG. 5B. Control elements 82, 83 situated near a position 75 (the center) of control spotlight 70 are scaled to be the largest. Point of interest 86, however, is also scaled to be larger compared to its representation in FIG. 5A. As finger 71 approaches further, the analysis of the direction of movement of finger 71 reveals that position 75 of control spotlight 70 has shifted slightly. Point of interest 82 in FIG. 5C is therefore scaled to be larger than point 83, which is further removed from the center position 75 of control spotlight 70. FIG. 5D shows the situation in which finger 71 is situated in an activation region that is defined relative to the representation of